FIG.1

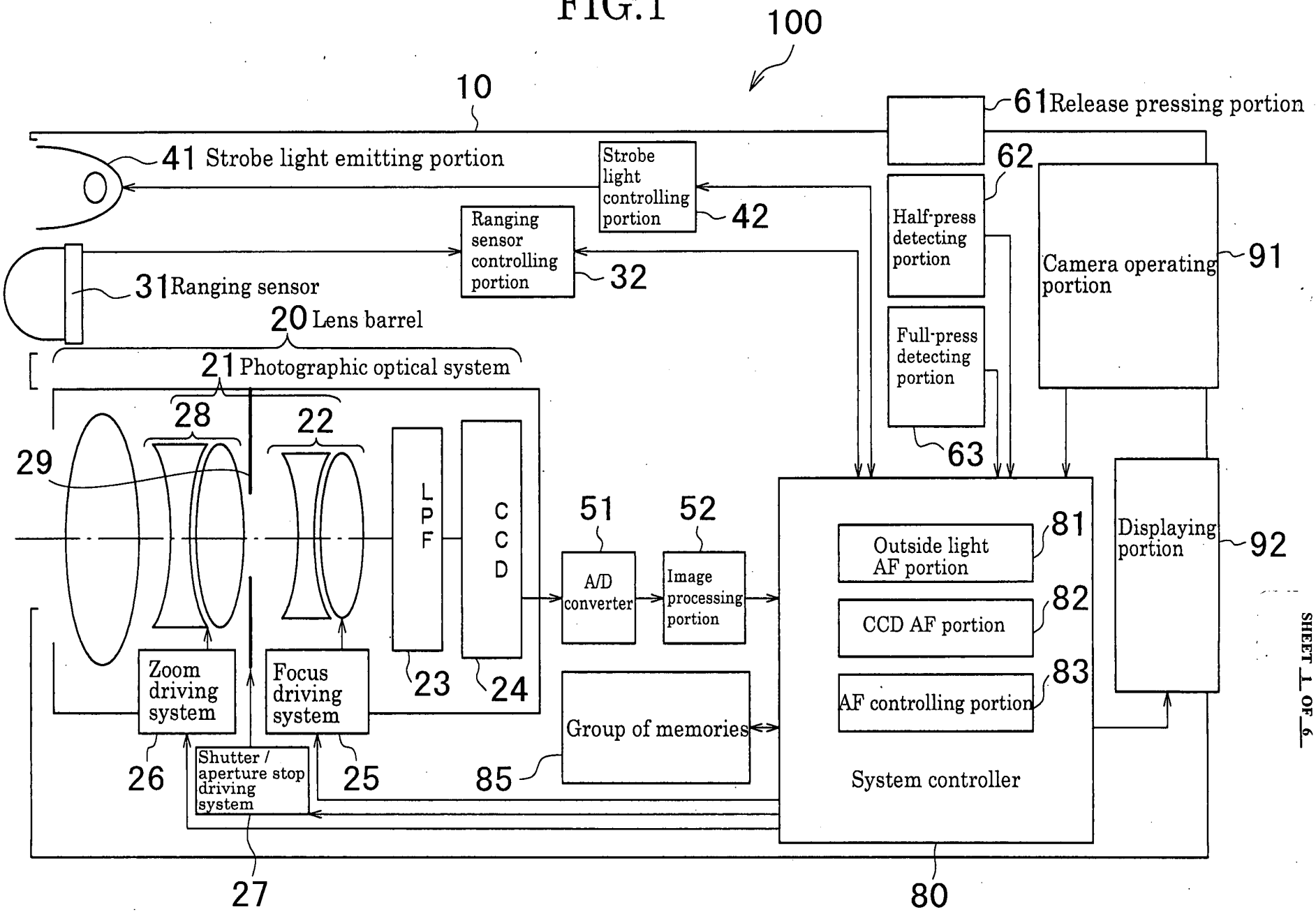

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FIG. 2A

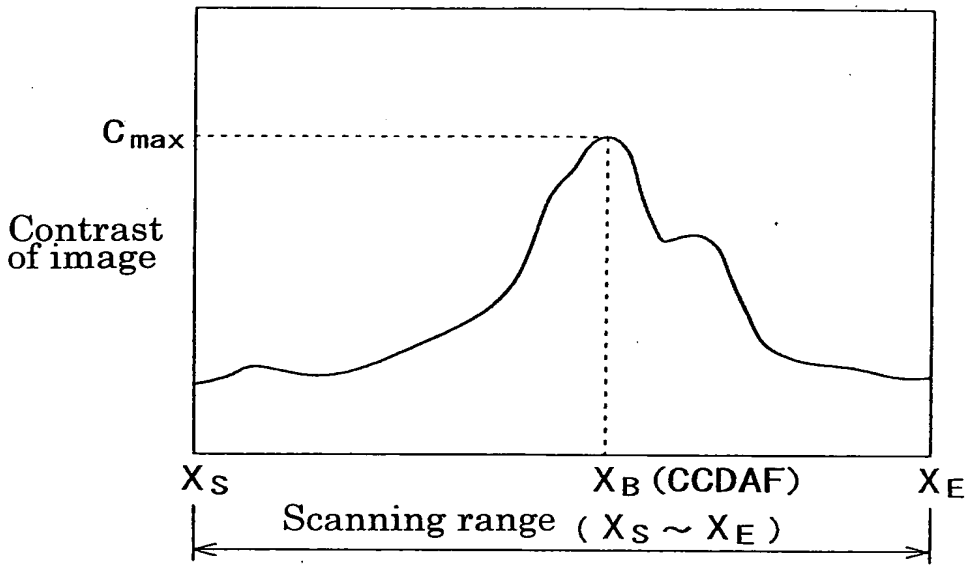

Cmax
Contrast of image
XS
XB (CCDAF)
XE
Scanning range (XS ~ XE)
Position of focusing lens X

FIG. 2B

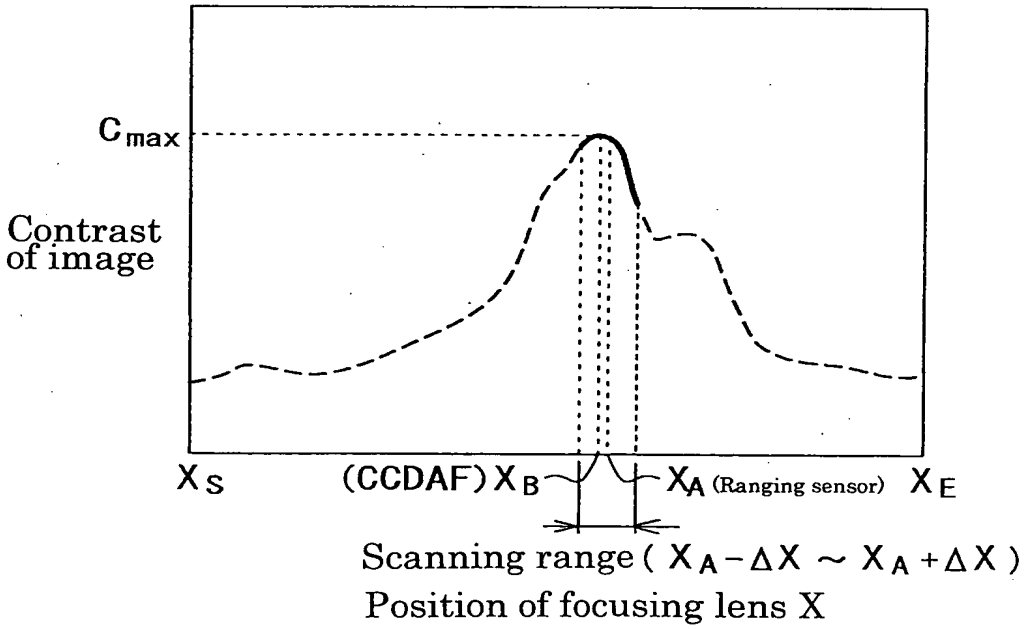

Cmax
Contrast of image
XS
(CCDAF) XB
XA (Ranging sensor)
XE
Scanning range (XA − ΔX ~ XA + ΔX)
Position of focusing lens X

FIG.3

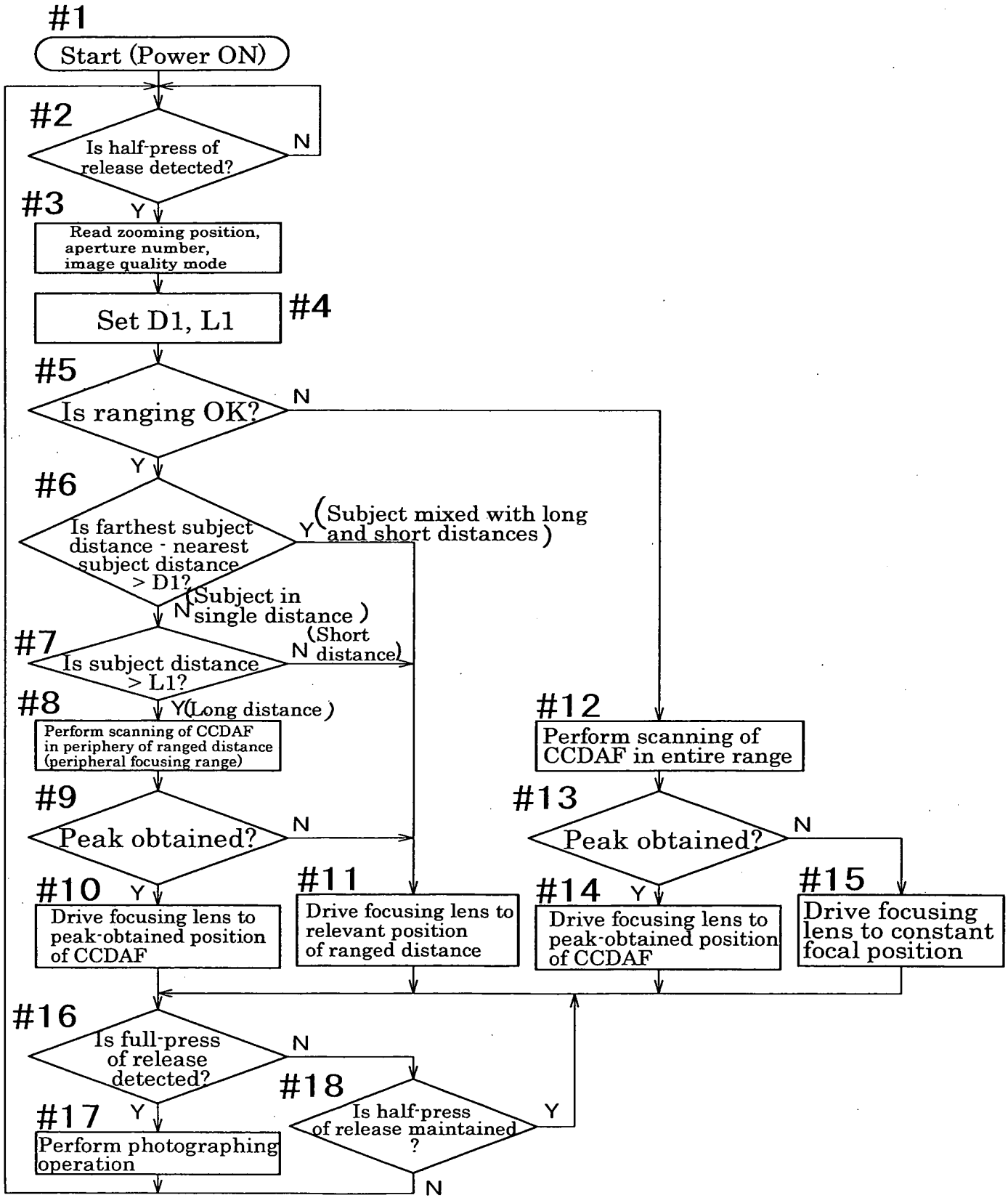

#1
Start (Power ON)
#2
Is half-press of release detected?
N
Y
#3
Read zooming position, aperture number, image quality mode
Set D1, L1
#4
#5
Is ranging OK?
N
Y
#6
Is farthest subject distance - nearest subject distance > D1?
Y (Subject mixed with long and short distances)
N (Subject in single distance)
#7
Is subject distance > L1?
N (Short distance)
Y (Long distance)
#8
Perform scanning of CCDAF in periphery of ranged distance (peripheral focusing range)
#9
Peak obtained?
N
Y
#10
Drive focusing lens to peak-obtained position of CCDAF
#11
Drive focusing lens to relevant position of ranged distance
#12
Perform scanning of CCDAF in entire range
#13
Peak obtained?
N
Y
#14
Drive focusing lens to peak-obtained position of CCDAF
#15
Drive focusing lens to constant focal position
#16
Is full-press of release detected?
N
Y
#17
Perform photographing operation
#18
Is half-press of release maintained ?
Y
N

FIG.4A

Example of setting D1

High image quality	Wide～Mean	Mean～Tele
Small aperture	20cm	10cm
Open aperture	40cm	20cm

Low image quality	Wide～WM	MT～Tele
Small aperture	10cm	5cm
Open aperture	20cm	10cm

FIG.4B

Example of setting L1

High image quality	Wide～WM	WM～Mean	Mean～MT	MT～Tele
Small aperture	5m	10m	20m	∞
Open aperture	3m	5m	10m	30m

Low image quality	Wide～WM	WM～Mean	Mean～MT	MT～Tele
Small aperture	20m	∞	∞	∞
Open aperture	10m	20m	30m	∞

FIG.5

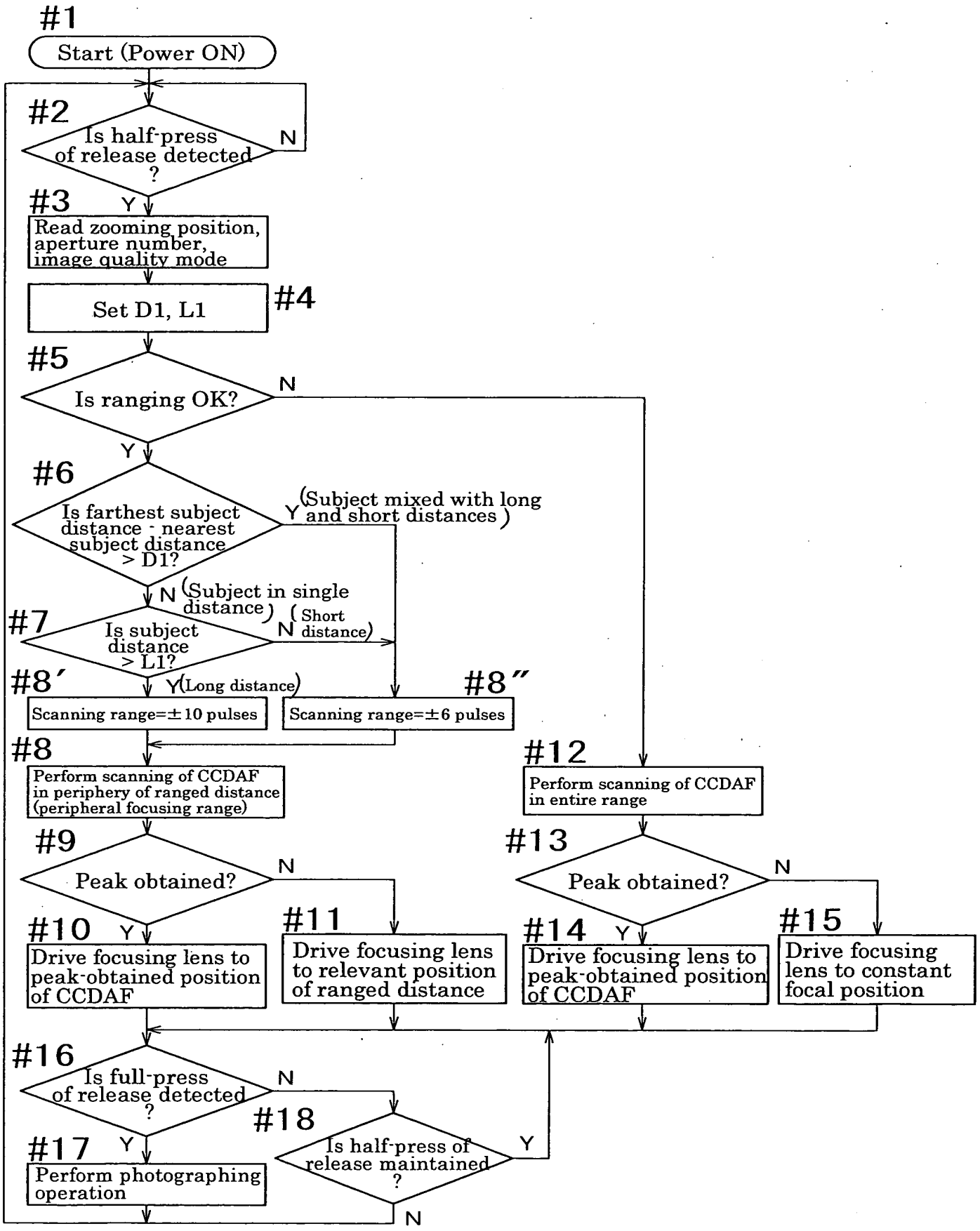

#1
Start (Power ON)
#2
Is half-press of release detected ?
N
Y
#3
Read zooming position, aperture number, image quality mode
Set D1, L1
#4
#5
Is ranging OK?
N
Y
#6
Is farthest subject distance - nearest subject distance > D1?
Y (Subject mixed with long and short distances)
N (Subject in single distance)
#7
Is subject distance > L1?
N (Short distance)
Y (Long distance)
#8′
Scanning range=±10 pulses
#8″
Scanning range=±6 pulses
#8
Perform scanning of CCDAF in periphery of ranged distance (peripheral focusing range)
#9
Peak obtained?
N
Y
#10
Drive focusing lens to peak-obtained position of CCDAF
#11
Drive focusing lens to relevant position of ranged distance
#12
Perform scanning of CCDAF in entire range
#13
Peak obtained?
N
Y
#14
Drive focusing lens to peak-obtained position of CCDAF
#15
Drive focusing lens to constant focal position
#16
Is full-press of release detected ?
N
Y
#17
Perform photographing operation
#18
Is half-press of release maintained ?
Y
N

FIG.6

(Prior Art)

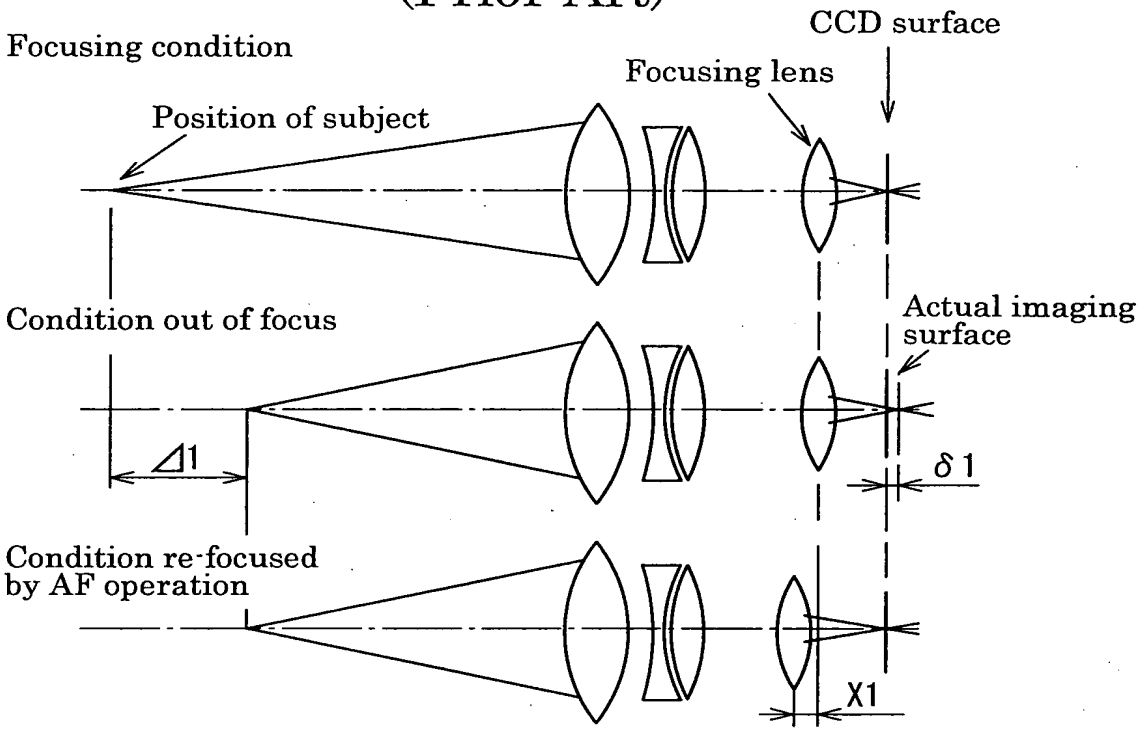
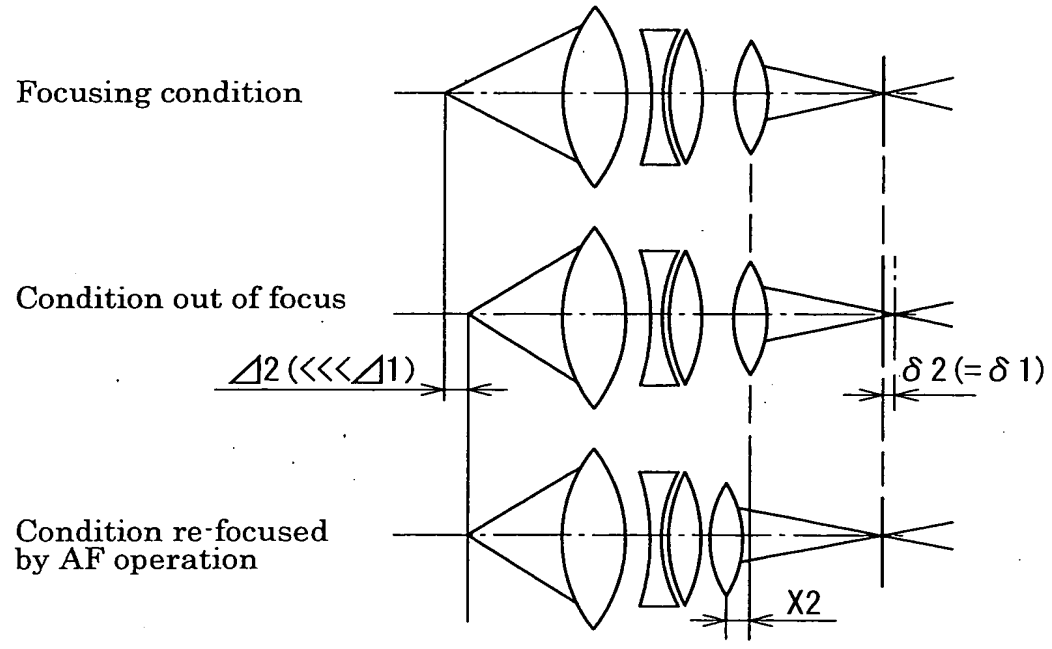


FIG.7

(Prior Art)